



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/693,077

10/24/2003

Qing Yang

022193-105.11US

3381

20350

7590

07/12/2006

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

GU, SHAWN X

ART UNIT

PAPER NUMBER

2189

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,077

Applicant(s)

YANG, QING

Examiner

Shawn Gu

Art Unit

2189

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-48 is/are pending in the application.
- 4a) Of the above claim(s) 3-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/20/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on 20 March 2006 was filed after the mailing date of the application on 24 October 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the Examiner.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show local RAM 50-53 (page 3, paragraph [0018]) and local disk 84-87 (page 4, paragraph [0020]) as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

Art Unit: 2189

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 30, 35, 41 and 46 are objected to because of the following informalities:

Per claims 30, 35 and 41, the acronym "RAID" should be spelled out.

Per claim 46, the acronym "RAM" should be spelled out.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 32-43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

Art Unit: 2189

which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Per claims 32 and 37, there are no “first set”/“first plurality of” and “second set”/“second plurality of” of computer systems described in the specification. Instead the application only disclosed a single group/set of computer systems forming a unified and distributed cache memory and a unified and distributed storage device. The specification did not distinguish the computer systems into two separate sets/groups, wherein one set having the means forming the cache memory and the other set forming the storage device. The cache memory and storage device taught by the specification are formed by the same set of computer systems (Computer Devices 12-15, see specification, Para. [0018]-[0019], and drawings, Fig.1-2).

Per claims 32-36, the specification does not teach organizing a portion of the memory of each computer system as a unified cache memory, or organizing a portion of the storage of each computer system as a unified storage. Claim 32 seems to be teaching that each memory portion is a unified cache memory and each storage portion is a unified storage. Instead, the specification only teaches organizing a unified cache memory using a portion of the memory of each computer system, and organizing a unified storage using a portion of the data storage of each computer system.

Art Unit: 2189

All dependent claims are rejected as having the same deficiencies as the claims they depend from. Appropriate correction is required.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 32-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Per claims 32-43, the limitation "said information network" in claims 32, 37-39 and 43 lacks sufficient antecedent basis.

Per claim 33, the Examiner is unclear which set of computer systems of claim 32 is referred to by the limitation "said computer systems" on line 2-3 and line 4.

All dependent claims are rejected as having the same deficiencies as the claims they depend from. Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

9. Claims 25-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Carter et al. [6,148,377] (hereinafter "Carter").

Per claims 25, 32, 33, 37, 44, 45 and 46, Carters teaches an information backup system (Computer Network 10, Fig.1) comprising:

a plurality of computer systems (Nodes 12a-c, Fig.1; Col.5, Ln.60-67);

a communication network (Network 10 in Fig.1 and Col.6, Ln.1-11), to which at least some of said computer systems are communicatively coupled;

a distributed cache memory (combination of local RAM caches 34a-c, see Fig.2 and Col.10, Ln.25-41) comprising a plurality of memory portions, each memory portion being a portion of a memory of a computer system among a subset of said computer systems, said memory portions being organized to function as a single coherent cache memory (the local RAM caches 34a-c serve as a single coherent cache for the shared memory space and the operation system 16, Col.7, Ln.18-38, Col.8, Ln.12-27, Col.10, Ln.25-41, Col.12 Ln.29-55); and

a distributed data storage device (combination of Disks 36a-c, see Fig.2) comprising a plurality of data storage portions, each data storage portion being a portion of a storage (Col.2, Ln.49-53) of one or more data storage devices of a computer system among said subset of computer systems, said data storage portions being organized to function as a single data storage device (shared memory space and global address, see Fig.6, Col.7, Ln.18-52, Col.8, Ln.28-47, Col.12, Ln.30-55), wherein said computer systems can perform data I/O with said distributed data storage device and wherein said distributed cache memory is operable as a cache memory for said distributed data storage device (each local RAM cache serves as data cache for requested pages of the shared memory space which consists of the RAID disks 36a-c).

It is clear that claims 25, 32, 33, 37, 45 and 46 are already substantially disclosed in claim 44 set forth.

Per claims 32 and 37, the first and second set of computer systems of claim 32 and the first and second plurality of computer systems of claim 37 are both taught by Carter as Nodes 12a-12c (see Fig. 1 and 2).

Per claims 45 and 46, the first set of said computer systems is taught by Carter as Nodes 12a-12c, and Carter further teaches RAM memory (RAM, see Col.2, Ln.49-53, Col.3, Ln.22-40; Col.10, Ln.8-24).

Per claim 26, Carter further teaches said functionally coherent and physically distributed cache memory is operable as data cache for I/O operations with said functionally coherent and physically distributed data storage device (each local RAM cache serves as data cache for requested pages of the shared memory space which consists of the RAID disks 36a-c).

Per claims 27 and 38, Carter further teaches said first set of computer systems comprises all of said compute systems (Nodes 12a-12c, see Fig. 1 and 2).

Per claims 28, 39 and 43, Carter further teaches said first set of computer systems comprises a subset of said computer system (if the said computer system is scaled by additional nodes, then Nodes 12a-c becomes only a subset of the system, see Col.2, Ln.11-15 and Ln.56-63).

Per claims 29, 34 and 40, Carter further teaches another computer system, not belonging to said first set of computer systems, can access said functionally coherent and physically distributed data storage device (the additional node can access the storage device after the system is expanded, see Col.2, Ln.11-15 and Ln.56-63).

Art Unit: 2189

Per claims 30, 35 and 41, Carter further teaches said functionally coherent and physically distributed data storage device is configured as a functionally coherent and physically distributed RAID storage device (RAID, see Col.3, Ln.38-40).

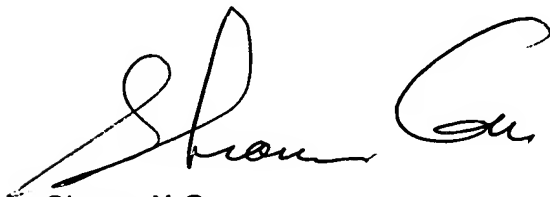
Per claims 31, 36 and 42, Carter further teaches said memory portions are portions of volatile random access memories of said first set of computer systems (RAM, see Col.2, Ln.49-53, Col.3, Ln.22-40; Col.10, Ln.8-24).

Conclusion

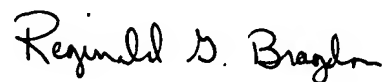
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn Gu whose telephone number is (571) 272-0703. The examiner can normally be reached on 9am-5pm, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald Bragdon can be reached on (571) 272-4204. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shawn X Gu
Patent Examiner
Art Unit 2189



REGINALD BRAGDON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

26 June 2006